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NEW APPROACHES TO THE STUDY OF HUMAN COMMUNICATION.

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IN VARIOUS STUDIES, BRIEFLY DESCRIBED IN THIS PAPER, SOUND FILMS WERE MADE OF PEOPLE ENGAGED IN VERBAL COMMUNICATION. THE FILMS WERE ANALYZED TO NOTE RELATIONSHIPS BETWEEN PHYSICAL MOVEMENT AND THE ACTUAL CONTENT OF THE CONVERSATION. THE FRAMES OF THE FILM WERE SEQUENTIALLY NUMBERED TO CORRELATE THEM TO THE NEAREST FRAME WITH THE SOUND RECORDING. SOME RESEARCH TOOK NOTE OF A SINGLE PERSON'S MOVEMENTS DURING THE MOVIES AND OTHER WORK WAS DONE ON THE RELATIONSHIP BETWEEN TWO INTERACTORS' MOVEMENTS (INCLUDING BODY CONSONANCE OR CONGRUENCE). INCIDENTAL STUDIES INVOLVED THE RELATIONSHIP BETWEEN MOVEMENT AND CERTAIN WORDS OR PHONEMES. IT WAS NOTED THAT IN EACH MOVIE THERE WERE AT LEAST A FEW TIMES WHEN TWO INTERACTORS MOVED THE SAME PART OF THEIR BODIES IN THE SAME WAY AT THE SAME TIME. THIS TANDEM MOVEMENT WAS CALLED SYNCHRONY. SYNCHRONY WAS LATER FOUND TO OCCUR BETWEEN DIFFERING ELEMENTS--THE SPEAKER'S CIGARETTE AND THE LISTENER'S HEAD, FOR EXAMPLE. ANOTHER STUDY BROUGHT UP THE QUESTION OF WHETHER INTERACTORS CHANGE POSTURE AS THE NARRATIVE CHANGES FROM SHARED TO NON-SHARED EXPERIENCES. THE QUESTIONS RAISED BY THESE STUDIES POINT OUT THE NEED FOR MORE BASIC OBSERVATION IN DYNAMIC COMMUNICATION RESEARCH. THIS STUDY IS PUBLISHED IN "ANTHROPOLOGICAL LINGUISTICS," DECEMBER, 1966. (JD)

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NEW APPROACHES TO THE STUDY OF HUMAN COMMUNICATION*

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The study of human communication can be thought of as an extremely wide, encompassing approach to the study of man. Under this single rubric, however, are housed a motley lot ranging from literati, biologists and phenomenologists, to psychiatrists, mathematicians, anthropologists and the A.T. & T. In spite of an avowed common interest, the dull fact is that there is very little agreement about research strategies or, surprisingly, what the subject matter is. Many researchers consider communication as some kind of abstract ideal system which is epitomized in Black Box Theory. Others consider the stream of communicational behavior as divisible into some number of parts or events — the number and names of agreed-on categories tending to vary with the training of the observers. Some scholars consider a dyad as two individual 'selves', while others impute various kinds of structure and super-organicity to the interaction, ranging from psycho-analytic transference models to models of co-action. In spite of this tremendous diversity of approach, there is general agreement that many interesting problems exist, and that perhaps explanations of man's ontogenesis, his perceptions and cognitions, his culture, his pathology and his being, lie close by.

This report, restricted to a seemingly microcosmic portion of the universe of human communication, reflects the attempt to observe and examine a two-person communication system within the context of face-to-face interaction. This is the domain where much of our learning occurs, where we are nurtured, and must live.

As we push and probe into the dimensions of behavior in this two-person system, the data prompt a number of changes in perspective. Recorded material — sound films which can be projected and re-played — encourage repeated, if not more careful, observation. This repeated observation can be used as a search probe to pursue new insights into the dynamics of behavior. More likely, we tend to study the two-dimensional flatness of film, to accept its comforting measure of reality-substitution, and to act as if it is a complete approximation of a three-dimensional system. In any case, the dyadic vis-à-vis — which represents normalcy in psychiatric parlance — lends itself well to models which claim to reflect and explain the essences of human behavior.

The act of communication is claimed by many to exist as a shared event-space, an inclusive agreement between two or more persons and exclusive of a

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putative third person who cannot lightly tread into it. It's not just shared space, as the crowded elevator or subway illustrate. It has, ordinarily, something to do with eye direction and focus, with respective distance, with consonance or symmetry of carriage and body posture. In fact, the rules by which the act of communication is structured are often discovered only in the breach. Thus a movie of two people sitting near enough to one another to be engaging in conversation, while each is attending to a different television program, presents an eerie, surrealistic slice of life. The ballerina, poised to begin her dance, also goes out of focus. A movement toward or away from the 'other', in our experience, is always accompanied by a related movement. Ordinarily, however, everyone seems to agree as to whether or not two people are really interacting.

The initial field of battle in the study of ongoing communication has taken place over the nature of ongoingness; i.e., communication as act or as process. Just where, how and how often should we plunge into the stream of behavior? Is the essence of the stream in the stream itself, in the observer, or someplace else?

The recent history of linguistic theory is marked by the attempt to reduce some forms of verbal behavior to a small number of significant discrete entities or units. One useful form of language, an alphabet, can be written by assigning a symbol to each unit. At the same time, somewhat arbitrary distinctions are made between that verbal behavior which is linguistic and that which is para- or extra-linguistic. Attempts were made to build up a model of verbal behavior based on ordinary linguistic data taken from words and sentences in isolation, and to apply this model to interactional behavior.[1]

Such a procedure would seem to preclude the possibility that interactional language might be different from 'static' or isolated language. On the contrary, innocent application of this frame of reference tends to foster the notion that communication is not a harmonic process, but a set of verbal acts which occur simultaneously with some non-verbal activity. It then becomes the linguist's task merely to record and notate the verbal behavior according to his convictions, while the body-motion man seeks the essence of communication in the remainder of the stream. This has been done, and done well enough to convince us that we are not yet able to write down and completely describe communicational speech in a manner reflecting its nature and integrity.[2]

From another vantage point, it is possible to take a film of any situation and divide it up in various ways on the basis of a number of axes. One obvious category is time, using a clock or frames of movies.[3] Another taxonomic device is to use similar movements or postures of one or more persons. The most popular approach has been the use of judgmental decisions which relate observed behavior to some other frame of reference.[4] All of these have already yielded some light and some are still viable.

These approaches, however, are in constant danger of yielding too easily to a loss of dynamism and to the study of discrete entities and units which are not derived from the study of interaction, but from some external source such as the clock or the observer's prior training. There is a strong tendency to apply a method which supposedly 'belongs' to linguistics — but

phonemics is a discovery procedure, not an arbitrary naming procedure. Linguistic fieldwork is a highly interpretive skill, and linguistic theory should not be applied by the unwary as a given end point.

This roughly reviews the situation of studies in human communication as several associates and I perceived it about three years ago. We recognized the fact that understanding of processual interactive elements was incomplete and that new directions were indicated. Since this took place in a psychiatric setting, we moved rapidly to problem areas impinging on systematic semantics — an area in which the psychiatrist feels at home. Three years ago, our most popular approach was to look for similar movements and postural configurations across the duration of an entire interactional scene.

Specifically, we took two primary approaches: one which viewed a single person's movements through the duration of a movie,[5] and one which looked at postural relationships between two interactors.[6] These two approaches yield somewhat different kinds of notation and analysis because they start from slightly different frames of reference. The data, however, as aspects of a natural history approach, are often very similar in kind.

Within the context of the dyadic interaction, observation of the movements of a single person yields a number of movement categories. Actually, these are limited in first viewings because gross movements of single body parts, such as an arm or the hand, are much more obvious to the naive observer than more subtle and combined movements. Each of these movement sets can be given a symbol and should be related to other phenomena, in or out of the interview.

The major proponent and user of this technique, instead of carrying through an analysis of these movement sets as they related to other movements or to the verbal behavior accompanying them, fell back on himself as judge, in the wish to apply psychoanalytic insight to the study of communication. Thus particular sets of similar movements were given not only symbols but also names which reflected psychoanalytic interpretations. For example, a clenched fist, in this interpretive frame, was directly equated with anger; and all verbal material co-occurring with the fist was seen as if directly reflecting some form of anger. This approach is quite appealing to most psychiatrists and is probably related to their clinical training, which puts a premium on the automatic transformation of data into usable information.

The second mode of observing similarities through time concerned configurational or postural relationships between the interactors. This has also been called body 'consonance' or 'congruence'. It assumes that the bodies, or some body parts, of the interactors are in particular relationships to one another and take their form and variation as a function of the ongoing nature of a given situation. We have all seen friends walking in step, or people standing and talking together with their arms similarly crossed. While this alone may be significant behavior, this kind of study of shared behavior has, to date, been more provocative than complete.

One promising by-product, however, has been the notion of narration. In the context of a particular studied film during periods of mirror consonance between a patient and therapist, the patient referred almost exclusively to time

and space outside of the present situation. That is, the patient was talking about situations which referred to times or places not in the therapeutic situation. While only behavior in the interview can be studied at any given moment, the interaction itself encompasses many different levels. For example, in relating an experience at home to someone who has never seen your home, a good deal of agreement is necessary about an outline, or a culturally standard 'fictive caricature' of a house. We can talk about our house as if the other person has, in fact, first-hand knowledge of it; and the other person appears to understand references about a particular situation he has never experienced.

The observer's concern is whether the interaction changes as the narrative changes from shared to non-shared experiences: Do the interactors change posture as they change referent time-space? The data of the consonance study suggest that they do. Unshared narrative of particular types, here spatio-temporal, occurs in the present-present when the interactors are in bodily mirror consonance, and tends not to occur otherwise. This suggests that interactional space in the present-present must be controlled and shared to establish the possibility of shared credence about the description of unshared events. This, however, is still an open question whose solution is basic to problems involving contextual meaning.

Incidental studies involved various probes into relations between words and the movements which accompany them. One such exploration focused on shared sets of words; e.g., movements which accompanied prepositions were examined. In another study,[7] we found that time duration of sounds spoken in context varied tremendously, that the concept of average phoneme length masks the actual variations, and that these variations have at least something to do with semantic and structural relationships.

Certain technical problems also became apparent during this early research and have been of great concern to us. The problem of accurately synchronizing the visual and auditory portions of a film, and the reduction of this data to the same accuracy, was solved by using a camera with a built-in tape recorder or video tape. A 'B' roll, which is a sequentially numbered, otherwise blank film, is placed on the master negative so that all prints of a given film are identically numbered. The combination of a frame-by-frame projector with an auxilliary sound reader permits the correlation of sound and sequentially numbered frames to the nearest frame.

The fact that film is inherently non-dynamic points to both a technical problem and a reorientation of thinking toward some of our current work and ideas. A movie film is made up of discrete exposures or frames, ordinarily filmed at a particular speed, to be projected at the same perceptually 'comfortable' speed. If this is done within certain limits, the finished product appears as a natural, smooth movement. The as-if nature of the smoothness and sense of continuity of movement direct us toward some interesting questions. What if we assume that what we perceive as smooth and continuous in ordinary movement is related to how we have learned to see? And what if the linguistic and visual relationships, which we feel to be so certain, actually or systematically occur not merely at presumed linguistic boundaries or junctures, but at varying

durations and velocities depending on the contexts and the structures in which they occur?

Consider the dance and the graceful movement when all portions of an arm-sweep arc are equal. Ordinary movement as it appears is not as uniformly rapid. In fact, most ordinary movements can be characterized as having a slow, short beginning, a more rapid, longer middle portion, and a slow terminal segment.

The second major non-uniform aspect of ordinary movements, especially purposive movements, is the sequence of parts entering into bodily motion. In putting a hand out to receive change, for example, there is little wrist movement until very near the end of the sequence. It is often the differences in such motions — in terms of order, distance and change points — which seem to characterize many sub-cultural and cultural variations. Thus smoothness is a perceptual artifact reified by film and thereby confirming our strain for consistency.

The observers' perception of smoothness is contingent upon projection of the film at the same speed it was made. There are now available two basic types of projectors: one which changes frames at some constant speed (variable from normal to about one per second), and one which must be controlled by hand (and is as variable as we are expert in controlling it). The first type of machine tends to divide all movement into single frame 'bumps', and gives a 'wooden soldier' effect — conducive to the feeling that the world of interaction is indeed made up of discrete pictures. The other type of projector appears to be the best way to examine the interaction in its own terms. If ordinary movement is variable in terms of speed and change, then we must be able to observe it at varying speeds and for different time durations.

Assuming that we can now begin to view the dynamic world — in its terms — problems of units, parts, and pieces, gain prominence. About a year and a half ago, we apparently learned how to watch two people at once; i.e., to look for shared motions.[8] This marked the beginning of the study we now call 'synchrony'.[9] Birdwhistell has noted that in most films there were at least a few times in which two interactors moved the same part of their bodies in exactly the same way and at the same moment. This tandem movement is striking, particularly if the movements are gross and move some distance.

It is also possible to observe at a micro level that most interactional movements share some properties — specifically synchronous changes of direction or velocity. This synchrony does not necessarily involve the same body parts; it might be in the speaker's cigarette and the listener's head-nods. Perhaps it is related to internal synchrony; perhaps the study of synchrony is merely a careful description of the factors which make an interaction communicational (with present viewing techniques sufficient for the descriptive job); perhaps the shared change of direction and velocity point out significant unit boundaries. While this may yet prove significant, synchronous boundaries coincide with word or syllable boundaries only part of the time, which suggests that there still remain relational and other structural factors which are not well understood.

Within a system of shared meta-communicative rules, it is strategically possible to talk about structures which have internal programs and units which have functions related to those structures.[10] In this gestaltist sense, it is possible that initiality and finality occur within sentences and other structures. We have already demonstrated that pre-signaled verbal information is present in language,[11] and that certain linguistic relationships exist which perform various functions with such structures and carry many simultaneous levels and forms of information to the listener.

It appears, moreover, that some functional relationships have to do with positional, contextual variations which tell where a thing is, the kind of structure it belongs to, and a plan of what is about to come.[12] This appears to be a kind of sub-stratum which carries functional information, independent of the 'real world' meaning of any particular word or utterance. The formulaic sentences a, b, c, and a, b, c contrast in a general meaning sense; b doesn't mean anything in particular. What they mean specifically is not particularly important; that they contrast, and how they contrast seems crucial to any general theory of communicational behavior and meaning. There is, after all, no reason to think that all problems of meaning are either equal or equivalent.

The need for dynamic communication research is great. We need to learn, for example, why two people seem unable to 'catch each other's eyes' while one is reading, to learn if a change of focus in coming into a communicative situation is always accompanied by a blink. Much very basic observational work needs to be done. Movies which have several simultaneous views of a situation are necessary if we are to judge how much and in what ways particular views tend to bias the observation; we need simultaneous close-ups and full body movement. We need movies of the same scene from each interactor's point of view — what does he see? With adequate monetary support and the advent of high-quality television tape recorders, this is now technically feasible.

Although a Natural History methodology is very persuasive (even seductive) to the anthropologist, strict adherence to lineal observation does not lead to a sense of comparison or of problem. Lineality is, after all, only one form of order. A critical undercurrent in observational studies of human communication is the ability to compare sensibly. On one level it is news only when two movements are identical. Differences can almost always be found between any two events within even a single domain. Thus there are no canons of significance, no notions of which samenesses and differences are meaningful relative to communicative behavior.

A viable study of communication is not restricted to the small segment reported here, but it belongs to a wider framework of knowledge and investigation. Above all, it seems essential for anthropology to begin to deal again with the study of man's behavior, and not only with his institutions.

NOTES

* This is a slightly revised version of the paper read at the Denver AAA meetings, November, 1965.

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12. Pollack, I. and Pickett, S.M., Intelligibility of Excerpts from Fluent Speech: Auditory vs. Structural Context, Journal of Verbal Learning and Verbal Behavior 3.79-84 (1964).